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The elimination of every, even the slightest, chromatic aberration obtained by this means increases, in my opinion, the defining and penetrating power of the microscope, and enlarges its dominion on the field of observation. Different other means have been now and then suggested, such as an alcohol light saturated with chlorine of iodine, or a light passed through a stratum of cupreo-ammoniacal solution, or even through a glass of cobalt; all these lights may be very useful and for some special purpose even preferable to any other, as Dr. Woodward observed, speaking of photography; but for direct observations with the microscope, the effects obtained by them are by no means to be compared with the marvellous results of a mono-chromatic illumination. And I do not think it absolutely necessary for this purpose to have recourse to a beam of the *sun*, which in many countries less favored than Italy is not rarely a mere desideratum, and very often a dim, cloudy thing. A brilliant luminous point of electric light—a light obtained from oxhydrogenic flame—acting upon lime, magnesium, or zirconium, perhaps also the magnesium-wire lamp, may supply the deficiency of the sunbeam. Each of these simply white lights decomposed through a prism, will give a mono-chromatic illumination sufficient to reveal the best structural details, which up to this day have baffled the keenest researches of the student.—COUNT CASTRACANE, *Monthly Microscopical Journal*.

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### ANTHROPOLOGY.

SUPPOSED INDIAN CORN HUSKERS.—In the museum of the Smithsonian Institution are several Indian stone implements like that noticed on p. 16 of the present volume of this journal, which are said to bear a striking resemblance to iron corn huskers now in use in the West.—EDS.

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### NOTES.

At the Manchester Literary and Philosophical Society, Mr. Boyd Dawkins exhibited a number of casts in plaster of Paris of various objects of natural history, and explained the process by which any one can make them for himself. The material of the

mould is artists' modeling-wax, which is a composition akin to that used by dentists; and, as it becomes soft and plastic by the application of heat, though in a cold state it is perfectly rigid, it may be applied to the most delicate object without injury. As it takes the most minute markings and striations of the original to which it is applied, the microscopic structure of the surface of the original is faithfully reproduced in the cast. This method is briefly this: 1. Cover the object to be cast with a thin powder of steatite or French chalk, which prevents the adhesion of the wax. 2. After the wax has become soft, either from immersion in warm water, or from exposure to the direct heat of the fire, apply it to the original, being careful to press it into the little cavities. Then carefully cut off the edges of the wax all round, if the undercutting of the object necessitates the mould being in two or more pieces, and let the wax cool with the object in it, until it is sufficiently hard to bear the repetition of the operation on the uncovered portion of the object. The steatite prevents the one piece of the mould sticking to the other. The original ought to be taken out of the mould before the latter becomes perfectly cold and rigid, as in that case it is very difficult to extract. 3. Then pour in plaster of Paris, after having wetted the moulds to prevent bubbles of air lurking in the small interstices; and, if the mould be in two pieces, it is generally convenient to fill them with plaster separately before putting them together. 4. Then dry the plaster casts either wholly or partially. 5. Paint the casts in water-colors, which must be fainter than those of the original, because the next process adds to their intensity. The delicate shades of color in the original will be marked in the cast by the different quantity of the same color, which is taken up by the different textures of the cast. 6. After drying the cast, steep it in hard paraffine. The ordinary paraffine candles, which can be obtained from any grocer, will serve the purpose. 7. Cool, and polish the cast by hand with steatite. The result of this process is said to be far better than that obtained by any other.—*The Manufacturer and Builder*.

The American Museum of Natural History held an exhibition of its collections in the Arsenal building, in the Central Park, to invited guests, April 27th. This Association was incorporated some two years since, and has made excellent progress in establishing a museum. The cases are said to contain nearly one thou-

sand mammals, ten thousand birds, and two thousand fishes and reptiles. There are also nearly four hundred mounted skeletons of the various orders. The insects number more than ten thousand, and shells about that number. Also a few geological specimens of no great value. There are no mineral collections as yet. The insects were presented by Baron Osten Sacken, R. A. Witthaus, and Coleman T. Robinson. The shells are the gift of Albert S. Bickmore and William A. Haines. The remainder of the collections was obtained by purchase in this country and Europe. The Department of Public Parks, under the authority granted by the last Legislature, will commence in the autumn the erection of a permanent building in Manhattan Square, for this collection. The cost of the new building will not exceed five hundred thousand dollars.—*American Chemist*.

Prof. Baird, of the Smithsonian Institution, who was last spring appointed by the President and confirmed by the Senate as United States Commissioner of Fish and Fisheries, will visit the coast of New England during the coming summer, making his head quarters at Wood's Hole. The act of Congress under which the Commissioner is appointed makes it his duty to prosecute investigations with a view of ascertaining whether any and what diminution in the number of valuable fishes has taken place, and if so, to what causes the same is due. He is also to report to Congress whether any and what protective prohibitory or precautionary measures should be adopted in the premises.

We understand that Prof. Baird will dredge extensively both at the surface and at the bottom, and the investigations will be of great interest to naturalists, several of whom will join him in his explorations.

The Providence Franklin Society celebrated its semi-centennial anniversary on May 9th. This society has been more active in the past than of late years, but seems now to show unusual activity. Several scientists of eminence have been active members, and we trust a new life and energy will be infused into its present working staff.

Silk worm eggs from Japan, to the amount of one hundred and thirty-five thousand cards, costing in that country six hundred and seventy-five thousand dollars, lately arrived in San Francisco.—*American Chemist*.

We are sorry to learn that the Government of Nova Scotia, in resorting to the retrenchment system, has withdrawn the small, annual grant heretofore made to the Institute of Natural Science, the only scientific society that colony possesses; and, moreover, one which for the past eight years has struggled to maintain a position creditable to itself and the country in which it is established. Surely the trouble and expense of publishing, setting aside the gratuitous mental labor of those members who have furnished the interesting papers which together form the eight annual parts, comprising two volumes of over one thousand pages, should have been considered by the authorities of the colony before they acted in such an illiberal spirit. We trust, nevertheless, to see the Institute still progress in its career of usefulness. — *Nature*.

Prof. Agassiz has accepted an invitation extended to him by the Coast Survey Bureau to take passage on the iron coast survey steamer, which has just been built near Wilmington, Del., and which sails for the Pacific coast in September next. The expedition will take deep sea soundings all the way, and extensive collections of specimens will be made for the Museum of Comparative Zoology at Cambridge.

Secretary Boutwell has written to the Secretaries of State and Navy asking that naval and other officers may be instructed to afford such courtesy and assistance to the exploring party as may be desirable.

We learn that Count Pourtales of the Coast Survey and Rev. Dr. Hill will accompany the expedition.

The Legislature of Arkansas has passed a bill providing for a geological survey, and making an appropriation of fifteen thousand dollars for beginning the work. The position of chief geologist, salary two thousand eight hundred dollars per annum, was tendered to Prof. Edward Orton, of Antioch College, one of the assistant geologists on the Ohio survey, but has been declined by him. — *American Chemist*.

The President of the Geological Society of Glasgow thinks the phosphate deposits of South Carolina are of Eocene Tertiary age. This is quite a mistake, as they are of Quaternary age. The bones he refers to were washed out of Eocene strata, but they are

associated with Quaternary mammals such as the tapir, horse, mastodon, mammoth, megatherium, dinotherium, etc.

The Maryland Academy of Sciences held its annual meeting in May, electing Rev. Dr. J. G. Morris, President, and Rev. E. A. Dalrymple, Corresponding Secretary, with the usual officers. This society holds field meetings, and otherwise shows considerable activity.

The State Geological Rooms at Springfield, Illinois, were burned on the twenty-second of February, and the state collections were greatly damaged by water and hasty removal.

The Record of Entomology for the year 1870 is now published. The design of this useful annual is to collect from various periodicals and transactions of societies, the titles of articles and notices of new discoveries in entomology, thus giving a record of the progress of American entomology each year. In this way the isolated descriptions of new species, and notes about the habits of insects are indicated so that the working entomologist is greatly aided in collecting the materials for study. It also gives foreign entomologists a summary of what has been done in this country, and thus brings the working entomologists of both hemispheres into closer relations. The work is advertised in the present number.

#### ANSWERS TO CORRESPONDENTS.

S. J., Hudson, Mass.—The plant you send is the *Habenaria virescens*. It belongs to the Orchis family and is not uncommon in wet places where the skunk cabbage grows.  
—J. L. R.

C. G. A., Augusta, Me.—The specimens you send from the pine tree of about sixty feet in height are pronounced by Prof. Gray to be unquestionably from the *Pinus Banksiana* as you supposed. Your Orland tree is remarkable for its height.

S. S. C.,—Speaking of the enemies of the oyster a correspondent writes:—"Along the tidal rivers and sounds of East Florida are vast beds of oysters, many of which are seen when the tide falls to have been opened and the animal removed. It was difficult to understand by what agency this was done. Inquiring of an intelligent native pilot and fisherman, I was told that the Sheephead and Drum, fishes whose principal food consists of crustacea and mollusks, are able with their strong jaws and pavement-like teeth to crush the shells of the oyster sufficiently to extract the animal. Moreover, the Couch (Turbo), [Does not our correspondent mean the Strombus?] which shell-fish is very common on these coasts, inserts its hard and horny operculum (which well represents an oyster knife), between the shells, pries them open, and sucks out the oyster with a fleshy tube, or proboscis. This Couch, which is from six to ten inches long, puts out a foot, upon which it can travel along the bottom. It walks to the oyster bed, deliberately pries open the oyster, and takes him raw on the half shell; a remarkable performance indeed, for a Gasteropod." We submitted this communication to an eminent naturalist, who has spent much time exploring in Florida, who replies as follows:—"Gasteropods do not open oysters with their opercula. The Turbo in fact is a vegetable feeder. The oysters are killed by frost in severe 'northers,' and when the animal decomposes, the shells, of course, open by the elasticity of the cartilage. No fish has teeth strong enough to crush oyster shells; they frequent the beds for the smaller shells and crustacea which harbor there."